

ment that has not been available in the past with conventional means of therapy.

The YAG laser has also been used to treat patients with interstitial cystitis and urethral stricture disease. Patients with interstitial cystitis have shown some promising results, especially those who have been refractive to all other conventional means of therapy. Unfortunately, the treatment of strictures has been the least rewarding of all of the new laser applications due to the relatively high recurrence rate seen by both Smith and ourselves.

A new field that is rapidly developing is the use of dye sensitizers such as hematoporphyrin derivative, which are concentrated in tumor cells and then, when exposed to an argon laser, cause necrosis of the tumor cells. This technique has been used with superficial skin lesions from breast carcinoma or melanoma but more recently has been used in the bladder for treating patients who have carcinoma of the bladder.

As the technology continues to improve, lasers will offer urologists in the 1980s more and exciting applications.

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Section Editor's Comment:

Endoscopic laser operation is still investigative in nature and we are eagerly waiting to learn of its full benefits and disadvantages.

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Cancer of Testis Curable

SURVIVAL PATTERNS in patients with nonseminomatous germ cell cancer of the testis have shown dramatic improvement in worldwide experience. Management changes in the past seven years have underscored the impact of more effective chemotherapeutic agents along with operative intervention. Using judicious selection of retroperitoneal node dissection and chemotherapy with cisplatin, bleomycin sulfate and vinblastine sulfate, stage B disease is virtually 100% curable. In addition, advanced or relapsed disease responds to salvage chemotherapy with more than 80% survival rates when cytoreductive operations are grossly complete and with 40% survival rates when persistent carcinoma remains.

High inguinal orchiectomy is the universal choice for initial treatment of a testicular tumor. When nonseminomatous tumor is diagnosed, clinical staging includes a computed tomographic scan of chest; mediastinum, abdomen and pelvis for detecting metastasis. Blood tests include determining α -fetoprotein and β -subunit human chorionic gonadotropin serum levels. If staging rules out extensive nodal involvement or widespread metastasis, retroperitoneal lymph node dissection may follow. If all markers are negative for tumor, some centers offer chemotherapy and surveillance alone without doing retroperitoneal lymph node dissection (Figure 1).

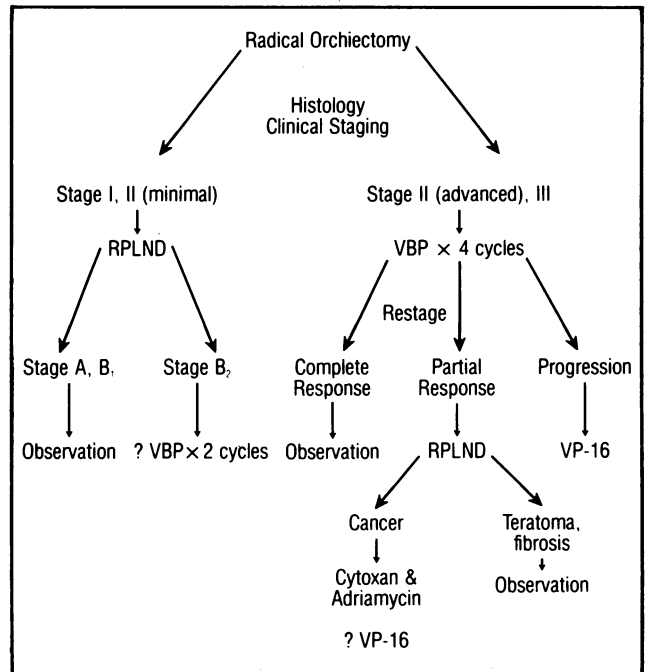


Figure 1.—Recommended plan of treatment for patients with non-seminomatous testicular cancer. RPLND = thoracoabdominal retroperitoneal lymph node dissection; VBP = vinblastine sulfate, bleomycin sulfate and cisplatin; VP-16 = etoposide (VP-16-213)

When no (stage A) or minimal (stage B) tumor deposits are found, close observation with salvage chemotherapy of recurrences (less than 10%) is appropriate. Virtually all such patients with recurrence will respond. When extensive nodal involvement in the abdomen (stage B3) or mediastinum is present or when widely metastatic tumor (stage C) is found, triple-agent chemotherapy is initiated. Patients who respond but who still have residual lesions are subjected to surgical intervention (retroperitoneal lymph node dissection). Patients showing progression may receive adjunctive chemotherapy using other agents such as etoposide (VP-16-213). Combined patient management by a urologist and an oncologist is recommended.

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Needle Urethral-Vesical Suspensions for Stress Incontinence

SINCE PEREYRA first described the needle urethral-vesical suspension procedure for stress incontinence, modifications have provided urologists with a procedure that has a 90% or greater success rate. It eliminates the need for an open pelvic operation through a substantial abdominal incision with splitting of the abdominal wall fascia; it significantly reduces operative time and intraoperative blood loss; it significantly decreases postoperative pain and duration of hospital stay, and it allows repair of an associated cystocele, enterocele or rectocele through the same approach.

The Raz modification of the Pereyra procedure uses a transvaginal approach, passing sutures through the retropubic space with the use of a long blunt needle. These sutures are secured above the rectus fascia, requiring only a small suprapubic skin incision. Transvaginal entrance into the retropubic space completely mobilizes the bladder neck, allowing finger guidance of the needle and the use of endopelvic fascia and posterior vaginal wall substantially lateral to the urethra for the repair. In cases of urethral incompetence due to multiple procedures, a fascial sling underneath the urethra can be constructed using the same approach. This sling will increase urethral closing pressure and provide the needed bladder neck and urethral elevation.

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Infertility—Evaluation and Management

ANDROLOGY is the study of men, particularly the male reproductive system. New developments in recent years have improved andrologists' ability to evaluate, diagnose and treat cases of male infertility. A screening semen analysis is the first step in evaluating a man's fertility potential. This includes the number of sperm, their percentage of motility and the ratio of normal to abnormal forms. If abnormal, then a medical history and physical examination are in order.

Of men evaluated for infertility, 36% have a varicocele, which is due to abnormal blood flow to the testicle and can be surgically corrected. The technologic advances in microsurgery have increased the success of vasovasostomies, with about 90% having sperm present in the ejaculate. But in only 50% to 70% of cases does a pregnancy result. These differences are probably due to the duration of vas obstruction before vasovasostomy. Structures like the epididymis, which were previously inoperable, can now be readily anastomosed using an operating microscope. An alloplastic spermatocele may provide men with congenital absence of the vas a method of having children; three pregnancies have been reported. In vitro fertilization can also be done to improve fertility when male factors contribute to infertility. This requires only thousands of sperm instead of millions.

In vitro techniques using the husband's sperm can improve the ejaculate for artificial insemination. Artificial insemination with donor sperm is an alternative for those couples in whom the man is sterile and his wife would like to experience the normal sequence of pregnancy, delivery and breast feeding.

The ability to preserve sperm by freezing has revolutionized the clinical treatment of infertility. In the near future, embryo and ovum banks will be as well established as sperm banks are today.

The clinical indications for sperm banking are twofold: one, to preserve sperm for men who will be sterilized either

voluntarily by vasectomy or involuntarily due to therapies that will cause irreversible damage to spermatogenesis; two, as a source of donor sperm for those couples who are barren due to male infertility that cannot be corrected. The donors are representative of many backgrounds and offer diverse physical characteristics.

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Noninvasive Evaluation of Scrotal Masses

HIGH-FREQUENCY, real-time sonography provides a non-operative method to locate scrotal masses and to distinguish lesions requiring clinical follow-up alone. Scrotal scanning with 7.5- or 10.0-MHz high-resolution real-time ultrasound correctly identifies vascular, neoplastic, cystic or traumatic lesions of the scrotal contents.

In an infertile patient, a small varicocele may not be clinically detectable. Sonographic detection is superior to that of thermography, venography, radioisotope scanning or Doppler techniques for accuracy. Small varicoceles have the same effect on male fertility as large ones and detection defines a therapeutic approach.

Testicular rupture, although rare, is difficult to define clinically due to edema, hematoma and pain. In 30 case studies by sonography, one false-positive and no false-negatives were reported.

Although testicular torsion can be correctly diagnosed with a Doppler stethoscope and radioisotope scans, scrotal ultrasound complements these studies and also defines a non-palpable testis.

Gray-scale sonography for accurately locating solid scrotal masses at an intratesticular or an extratesticular site has been used for some years. In addition, identification of a clinically occult testicular neoplasm, suspected by biopsy results from a metastatic site, has been reported in several series. At this time, however, scrotal sonography must be considered only confirmatory in the differential diagnosis of benign versus malignant lesions and surgical exploration is required when clinically indicated.

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Advances in Pediatric Urology

THE EFFORT of pediatric urologists to identify and correct genitourinary problems at a younger age has been furthered by several recent developments, the most provoking of which is the early diagnosis of fetal anomalies by prenatal ultrasound. Renal agenesis, hypoplasia, hydronephrosis and oligohydramnios may alert a physician to the need for early therapy. If progressive bilateral hydronephrosis with oligo-